

MATERIALS FOR A FLORA OF TURKEY XXXIX:
Orchidaceae

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ABSTRACT. Four new hybrids of *Dactylorhiza* are described and 3 new infraspecific combinations are made. In *Ophrys*, descriptions of 2 new subspecies and 5 new hybrids are given, together with 2 new subspecific combinations.

Intensive field exploration in recent years in connection with the OPTIMA project for the mapping of orchids in the Mediterranean area and with the preparation of the account of Orchidaceae for *Flora of Turkey* vol. 8 has led to the discovery of an undescribed subspecies of *Ophrys umbilicata* Desf. Several putative hybrids within *Dactylorhiza* and *Ophrys* are also described here, and a few new combinations within these two genera are also necessary.

Dactylorhiza [Necker ex] Nevski

Dactylorhiza × *breviceras* Renz & Taubenheim, **hybr. nov.** (= *D. osmanica* (Kl.) Soó, Nom. Nov. Gen. *Dactylorhiza*, Budapest, 3 (1962) × *D. urvilleana* (Steudel) Baumann & Künkele in Mitt. Bl. Arbeitskr. Heim. Orch. Baden-Württ. 13:240 (1981)).

Planta valida, caulis foliatus; *bracteae* elongatae, inflorescentiam manifeste superantes; *flores* magni, labello ± integro, c. 12 × 10 mm; *calcar* breve, c. 7 mm longum, conicum, acutum, ovario manifeste brevius. Type. Turkey A5/6 Amasya: Akdagh prope Amassia, *Manissadjian* 142b (holo. JE-Hausskn.).

The development of the inflorescence with rather large bracts approaches *D. urvilleana*. The short conical spur is characteristic of *D. osmanica*.

Dactylorhiza × *rizeana* Renz & Taubenheim, **hybr. nov.** (= *D. euxina* (Nevski) Baumann & Künkele in Mitt. Bl. Arbeitskr. Heim. Orch. Baden-Württ. 13:235 (1981) × *D. urvilleana* (Steudel) Baumann & Künkele, *loc. cit.* (1981)).

Planta alpina praecipue habitu congesto; *caulis* confertim 3-5-foliatus; *folia* obscure purpureo-maculata; *inflorescentia* densa, bracteis flores superantibus, inferioribus maculatis; *labellum* margine irregulariter dentato-crenulato; *calcar* late cylindricum, ovarium aequans. Type. Turkey A8 Rize: ad declivitatem borealem jugi Ovit geçidi supra İkizdere, 1900m, in palude alpina, 22 vi 1978, *J. Renz & G. Taubenheim* 12106 (holo. Hb. Renz, Basel).

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Similar to the alpine forms of *D. euxina*. The broad cylindrical spur, equal in length to the ovary, as well as the larger spots on the leaves, indicate an influence from *D. urvilleana*.

Dactylorhiza × **sivasiana** [Baumann & Künkele ex] Renz & Taubenheim, **hybr. nov.** (= *D. umbrosa* (Kar. & Kir.) Nevski, *loc. cit.* (1937) × *D. urvilleana* (Steudel) Baumann & Künkele, *loc. cit.* (1981)).

Syn.: [*D.* × *sivasiana* Baumann & Künkele in Mitt. Bl. Arbeitskr. Heim. Orch. Baden-Württ. 13:263, b. & w. t. 1 f. 18 (1981) *nom. nud.*].

Planta rigida; *caulis* foliatus; *folia* lanceolata, maculata; *inflorescentia* densa; *flores* intense purpureo-violacei; *labellum* latius quam longius, ± trilobum, marginibus irregulariter crenulato-dentatis; *calcar* rectum, leviter inflatum, ovarium aequans.

Type. Turkey A9 Çoruh: ad occidentem jugi Ardahan—Şavşat, 1350m, in pratis udis inter parentes, 26 vi 1978, J. Renz & G. Taubenheim 12138 (holo. Hb. Renz, Basel).

This hybrid has already been found in NE Anatolia by Baumann (*loc. cit.*, 1981): A6/7 Sivas: Sivas to Erzincan, nr Tülü, H. Baumann (n.v.). It combines some characters of each of the parent taxa in a rather indistinct way. An unequivocal diagnosis is only indicated when living plants can be selected out of a mixed population of the parents.

Dactylorhiza × **sultandagi** Renz & Taubenheim, **hybr. nov.** (= *D. iberica* ([Bieb. ex] Willd.) Soó, *loc. cit.* (1962) × *D. saccifera* (Brongn.) Soó, *op. cit.* 8 (1962)).

Habitus inter parentes. *Folia* elongata, angusta, ad 20 × 2cm, maculata; *inflorescentia* initio alte conica; *flores* roseo-purpurei, sepalis dilute maculatis, labello distincte trilobo, purpureo-picto, lobo intermedio parvo triangulari, calcar ovarium aequanti.

Type. Turkey B3 Konya: ad pedem montis Sultandağ, ad septentriones oppidi Akşehir, 1100m, ad fontes, 15 vi 1978, J. Renz & G. Taubenheim 12066 (holo. Hb. Renz, Basel, iso. E).

Distinctive on account of the narrow leaves, the fine marking on the labellum, and the narrow short spur, which indicate the participation of *D. iberica*. The ± deeply 3-lobed, darker coloured labellum is a characteristic influence of *D. saccifera*.

Dactylorhiza euxina (Nevski) Baumann & Künkele in Mitt. Bl. Arbeitskr. Heim. Orch. Baden-Württ. 13:235 (1981) var. **markowitschii** (Soó) Renz & Taubenheim, **comb. nov.**

Syn.: *Orchis caucasica* (Kl.) Soó var. *markowitschii* Soó in Notizbl. Bot. Gart. Berlin 9(89):909 (1926).

O. caucasica (Kl.) Soó var. *alpina* Schlechter in Feddes Rep. Sonderbeih. A, 1:173 (1927).

Type. [USSR] Caucasus, Ossetia: alp. ad Dagon, *Markowitsch* (holo. B, destroyed).

Distribution: NE Anatolia, Caucasia. Euxine element. In the alpine marshes of NE Anatolia var. *markowitschii* grows together with var. *euxina*.

Dactylorhiza osmanica (Kl.) Soó, Nom. Nov. Gen. Dactylorhiza, Budapest 4 (1962) var. **anatolica** (Nelson) Renz & Taubenheim, **comb. et stat. nov.**
Syn.: *Dactylorhiza elata* (Poirot) Soó subsp. *anatolica* Nelson in Taxon 28:593 (1979)!

[*Orchis gigantea* [Siehe ex] Soó in Feddes Rep. Sonderbeih. A, 2:229 (1933) *nom. nud. pro syn.*!]

Type. [Turkey C5 Adana] Cilicischer Taurus, Pozanti, Mitte Mai 1952, Blütenanalyse Nr. 26 (Hb. Nelson, STU).

Distribution: S & C Anatolia. In most rich populations of *D. osmanica* the luxuriant var. *anatolica* occasionally occurs. Sometimes whitish-cream forms are interspersed among the dominant form with purple-coloured flowers. There is a certain resemblance to the robust *D. elata* Poirot which, however, is an entirely W Mediterranean plant.

Dactylorhiza romana (Seb.) Soó, Nom. Nov. Gen. Dactylorhiza, Budapest 3 (1962) subsp. **georgica** (Kl.) [Soó ex] Renz & Taubenheim, **comb. nov.**
Syn.: *Orchis flavescens* C. Koch in Linnaea 22:281 (1849).

O. tenuifolia C. Koch, *loc. cit.* (1849).

O. mediterranea Kl. subsp. *georgica* Kl. in Acta Horti Petrop. 17:166 (1898).

[*O. georgica* (Kl.) Lipsky, Fl. Kavk. 457 (1899) *nom. illegit.*].

O. flavescens C. Koch emend. Nevski in Fl. URSS 4:701 (1935).

[*Dactylorhiza romana* (Seb.) Soó subsp. *georgica* (Kl.) Soó, Nom. Nov. Gen. Dactylorhiza, Budapest 3 (1962) *comb. inval.* (basionym incorrect)].

D. flavescens (C. Koch emend. Nevski) Holub in Folia Geobot. Phytotax. (Praha) 11:83 (1976).

[*D. sambucina* (L.) Soó subsp. *georgica* (Soó) Sunderm., Europ. Medit. Orchid. ed. 3:40 (1980) *comb. illegit.*].

[*D. flavescens* (C. Koch emend. Nevski) Baumann & Künkele in Mitt. Bl. Arbeitskr. Heim. Orch. Baden-Württ. 13:237 (1981) *comb. superfl.*].

Ophrys L.

Ophrys transhyrcana Czernjak. in Not. Syst. (Leningrad) 4:1 (Jan. 1923) subsp. **amanensis** [Nelson ex] Renz & Taubenheim, **subsp. nov.**

Syn.: [*O. sphegodes* Miller subsp. *amanensis* Nelson, Gestaltwandel 182, t. 21 f. 1-3; t. 45 f. 26-33 (1962) cum descr. lat., *nom. inval.* (typus non indicatus)].

[*O. spruneri* Nyman subsp. *amanensis* (Nelson) Landwehr, Wilde Orchid. Eur. 2:416, t. 192 (1977) *comb. inval. et illegit.*].

Lectotype designated here. Turkey C6 Adana: 2-3km südlich von Osmaniye, zwischen Karacalar und Dereobasi, in der Umgebung der Ortschaft Kaleli und der Teerfabrik, 200-250m und höher oben, c. 650m, Nelson & Demiriz 1195 (holo. Hb. Renz, Basel; iso. ISTE, Hb. Hub.-Morr., Basel).

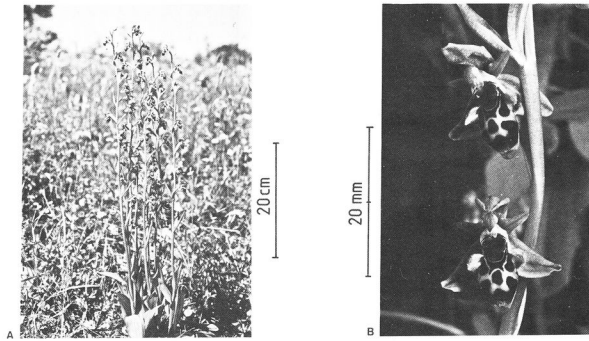


FIG. 1. *Ophrys umbilicata* subsp. *khuzestanica*: A, habit; B, flowers. From Taubenheim 82.152.

Distribution: S Anatolia. The close, taxonomically important link with *O. transhyrcana* is shown in the subulately elongated straight connective, characteristic for subsp. *transhyrcana*. *O. sphegodes*, as well as *O. spruneri*, always has a rather short connective. Of all *Ophrys* taxa, only *O. apifera* Hudson has a similar, long but typically flexuous connective.

Ophrys umbilicata Desf. in Ann. Mus. Hist. Nat. (Paris) 10:227, t. 15 (1807) subsp. **khuzestanica** Renz & Taubenheim, **subsp. nov.** (Fig. 1).

Syn.: [*O. carmeli* sensu Renz in Rech. fil., Fl. Iranica 126:77, t. 27 f. 1 (1978) non Fleischm. & Bornm. in Ann. Nat. Hofmus. Wien 36:7 (1923)].

Affinis *O. umbilicatae* Desf. subsp. *umbilicatae*, a qua statura majore, usque ad 45–60cm alta, inflorescentia plerumque valde elongata (ad 30cm), laxae pluri (5–12)-flora, bracteis magnis, ad 5 cm longis, inferioribus flores conspicue excedentibus, floribus saepe minoribus, inferioribus \pm distantibus, sepalis \pm obscure viridibus, lateralibus reflexis, bene distinguenda.

Type. Iran, prov. Khuzestan: ad orientem pagi Dow Gonbadan versus Chenar Shahijan, in silvis apertis (*Quercus brantii*), solo calcareo, 750m, 31 iii 1972, J. Renz 10601 (holo. Hb. Renz, Basel).

Representative Turkish specimens:—TURKEY. C7 Urfa: N of Birecik towards Halfeti, 450m, Renz & Taubenheim 80.103. C8 Siirt: 4km W. of Bağgöze, 550m, Taubenheim 82.152 (Fig. 1) & 82.156. C9 Mardin: Cizre, 400m, Renz & Taubenheim 12706. Additional localities in Iran and Iraq are mentioned in Rech. fil., Fl. Iranica 126:78 & 79 (1978) sub *O. carmeli*. The total distribution (W & SW Iran, NE Iraq and SE Anatolia) is mapped in Fig. 2.

Recently H. Baumann & S. Künkele (Mitt. Bl. Arbeitskr. Heim. Orch. Baden-Württ. 13:285–310, 1981) presented a detailed discussion of *Ophrys umbilicata*, which was discovered by Tournefort in his travels in the Levant and was described and illustrated by Desfontaines (*loc. cit.*, 1807). The authors concluded from their extensive literature and field studies that *O. umbilicata* from the W Anatolian littoral is conspecific with *O. carmeli* Fleischm. & Bornm. from Mt Carmel (Palestine). We observed at several localities in SE Anatolia an *Ophrys* race related to, but clearly distinct from, the W Anatolian *O. umbilicata*. It is most nearly allied to plants collected previously on the western foothills of the Zagros mountain chain in SW Iran. These have been treated in *Flora Iranica* as *O. carmeli* subsp. *carmeli*. Because of the conspecificity of *O. carmeli* and *O. umbilicata*, the earliest validly published epithet, we propose to keep the Iranian as well as the E Anatolian plants separate from *O. umbilicata sensu stricto*. Comparison of the Iranian and E Anatolian plants led to the conclusion that they are identical. The territory of the new subspecies, subsp. *khuzestanica*, extends from SE Anatolia to SW Iran (Prov. Khuzestan and Fars), the south-easternmost limit of the genus *Ophrys*. The constant combination of some distinctive characters, such as the striking tall-growing habit, the elongated inflorescence with distantly arranged lower flowers, and dull green sepals with the laterals reflexed, as well as the discrete geographical range, are in our opinion not just of local significance. We, therefore, believe that subspecific rank is justified.

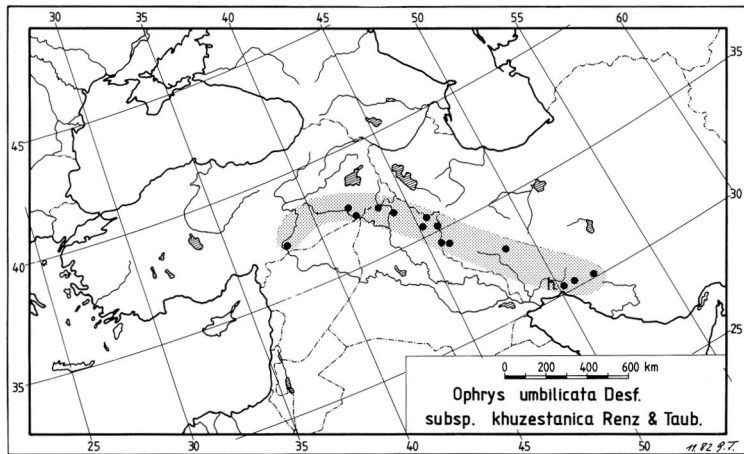


FIG. 2. Distribution of *Ophrys umbilicata* subsp. *khuzestanica*, h = holotype.

Ophrys × **adelphica** Renz & Taubenheim, **hybr. nov.** (= *O. bombyliflora* Link in Schrader, J. Bot. 1799(2): 325 (1800) × *O. umbilicata* Desf. in Ann. Mus. Hist. Nat. (Paris) 10:227, t. 15 (1807) subsp. *umbilicata*).

Habitu *O. umbilicatae*, sed floribus bene minoribus, sepalis viridibus, obtusis, petalis dense velutinis, labello globoso-convexo 6–7mm longo, apice breviter appendiculato distinguitur.

Type. Turkey B1 Izmir: 19km ab oppido Turgutlu versus Kemalpaşa, 350m, v 1976, *G. Taubenheim* 76.170 (holo. Hb. Renz, Basel).

Both parent taxa occur at the type locality.

Ophrys × **liceana** Renz & Taubenheim, **hybr. nov.** (= *O. bornmuelleri* M. Schulze in Verh. Zool.-Bot. Ges. Wien 48:635 (1898) descr. et Mitt. Thür. Bot. Ver. N.F. 13–14:127 (1899) nomen subsp. *bornmuelleri* × *O. umbilicata* Desf. subsp. *khuzestanica* Renz & Taubenheim (vide supra)).

Proxima *O. umbilicatae* subsp. *khuzestanicae*, a qua praecipue petalis minutis deltoideo-ovatis velutinis differt; ab *O. bornmuelleri* labello alte trilobo, lobis lateralibus breviter gibbosis bene distinguenda.

Type. Turkey B8 Diyarbakir: in querceto ad occidentem oppiduli Lice, c. 1000 m, 12 v 1981, *J. Renz* & *E. Sezik* 12931 (holo. Hb. Renz, Basel).

The labellum is clearly trilobed and the petals are very small.

Ophrys × **macrostachys** Renz & Taubenheim, **hybr. nov.** (= *O. bornmuelleri* M. Schulze subsp. *carduchorum* Renz & Taubenheim in Orchidee 31:242 (1980) × *O. umbilicata* Desf. subsp. *khuzestanica* Renz & Taubenheim).

Habitus inter parentes. *Inflorescentia* elongata, ad 29cm longa et 10-flora; *petala* minuta, ovata, villosa, 2–2.5mm longa; *labellum* trilobum, lobis lateralibus gibbosis, speculo parvulo ± simplici ornatum.

Type. Turkey C9 Siirt: in querceto prope pagum Üzümlük, inter Siirt et Eruh, 650–700m, 16 v 1981, *J. Renz* & *E. Sezik* 12958 (holo. Hb. Renz, Basel; iso. HUEF).

These plants differ from *O. bornmuelleri* subsp. *carduchorum* in having a 3-lobed labellum and from *O. umbilicata* subsp. *khuzestanica* by their tiny triangular-ovate petals.

Ophrys × **notabilis** Renz & Taubenheim, **hybr. nov.** (= *O. bornmuelleri* M. Schulze subsp. *carduchorum* Renz & Taubenheim, loc. cit. (1980) × *O. holoserica* (Burm. fil.) Greuter in Boissiera 13:185 (1967) subsp. *holoserica*).

Flores inter parentes; *petala* minuta, ad 1.5mm longa, ovata; *labellum* arcuatum, latius quam longius, 6–7 × 9–11mm, apice in appendicem parvam triangularem productum; *speculum* e basi usque ad labelli medium extensum, vario modo lobatum, 2–3 maculis ovalibus brunneis cingens.

Type. Turkey C9 Siirt: in querceto prope pagum Üzümlük, inter Siirt et Eruh, 800 m, 16 vi 1981, *G. Taubenheim* 81.209 (holo. Hb. Renz, Basel).

The petals are even smaller than those of subsp. *carduchorum*; the speculum of the rather small labellum is more complex, similar to that of *O. holoserica*.

Ophrys × perspicua Renz & Taubenheim, **hybr. nov.** (= *O. holoserica* (Burm. fil.) Greuter subsp. *holoserica* × *O. phrygia* Fleischm. & Bornm. in Ann. Naturh. Mus. Wien 36:9 (Feb. 1923)).

Habitus inter parentes. *Inflorescentia* floribus ± remotis; *sepala et petala* roseo-violacea, petala ovato-ligulata vel ligulata et basi ampliata, velutina; *labellum* praecipue integrum, partim tantum lateralibus ± incisum, basi cornubus parvis instructum, antice in appendicem parvam porrectum.

Type. Turkey B8 Siirt: in valle Sasun, in querceto, c. 800m, solo calcareo, 13 v 1981, J. Renz & E. Sezik 12940 (holo. Hb. Renz, Basel; iso. HUEF). TURKEY. C9 Siirt: 42km from Pervari to Siirt, *Quercus* scrub, 700m, Taubenheim 82.147. Frequent in E Anatolia.

The most typical forms of this hybrid are very intermediate between the parent taxa. Most plants have a ± entire labellum (sometimes with small incisions near the base) and nearly ovate, small petals (2–3mm long), characters which tend towards *O. holoserica*. The appearance of the plants, especially the inflorescence, shows the influence of *O. phrygia*.

Ophrys bornmuelleri M. Schulze in Verh. Zool.-Bot. Ges. Wien 48:635 (1898) descr., Mitt. Thür. Bot. Ver. N.F. 13–14:127 (1899) nomen subsp. **grandiflora** (Fleischm. & Soó) Renz & Taubenheim, **stat. nov.**

Syn.: *O. bornmuelleri* M. Schulze forma *grandiflora* Fleischm. & Soó in Feddes Rep. 24:26 (1927).

O. fuciflora (F. W. Schmidt) Moench subsp. *bornmuelleri* (M. Schulze) B. & E. Willing var. *grandiflora* (Fleischm. & Soó) B. & E. Willing in Orchidee 26:78, f. 2 (1975).

[*O. holosericea* (Burm. fil.) Greuter subsp. *bornmuelleri* (M. Schulze) Landwehr var. *grandiflora* (Fleischm. & Soó) Landwehr, Wilde Orchid. Eur. 2:472 (1977) *comb. inval.*].

Syntypes: Turkey [C6 Hatay] cum typo in Syria, sic Svedia (Suadiye), Kotschy (B); [Palestine] Jerusalem, Dinsmore (B).

Distribution: Cyprus, S & SE Anatolia, W Syria.

Ophrys holoserica (Burm. fil.) Greuter in Boissiera 13:185 (1967, sphalm. '*holosericea*') subsp. **candica** ([Nelson ex] Soó) Renz & Taubenheim, **comb. nov.**

Syn.: [*O. fuciflora* (F. W. Schmidt) Moench subsp. *candica* Nelson, Gestaltwandel 165 (1969) *nom. inval.* (typus non indicatus)].

[*O. candica* (Nelson) O. & E. Danesch, Orch. Eur. Südeur. 31 (1969) *comb. inval.*].

[*O. holosericea* (Burm. fil.) Greuter var. *candica* (Nelson) Sunderm., Europ. Medit. Orchid. ed. 2:45 (1975) *comb. inval.*].

O. fuciflora (F. W. Schmidt) Moench subsp. *candica* [Nelson ex] Soó in Bot. J. Linn. Soc. 76:368 (1978).

O. candica ([Nelson ex] Soó) Baumann & Künkele in Mitt. Bl. Arbeitskr. Heim. Orch. Baden-Württ. 13:349 (1981).

Type (designated by Soó, *loc. cit.*, 1978): the illustration in Nelson, Gestaltwandel, t. 13 f. 1 (1962).

Distribution: Greece, Aegean Islands, SW Anatolia.

Ophrys vernixia Brot., Fl. Lusit. 1:24 (1804) subsp. **regis-ferdinandii** ([Acht. & Kellerer ex] Kuzmanov) Renz & Taubenheim, **comb. nov.**

Syn.: [*O. speculum* Link subsp. *regis-ferdinandii-coburgii* Acht. & Kellerer apud Keller in Feddes Rep. Sonderbeih. A, 3: t. 186 (1935) *nom. inval.*].

[*O. speculum* Link subsp. *regis-ferdinandii* Acht. & Kellerer in Izv. Carsk. Prirod. Inst. Sofija 12:206 (1939) *nom. illegit.*].

O. speculum Link forma *regis-ferdinandii* [Acht. & Kellerer ex] Renz in Rech. fil., Fl. Aeg. 819 (1943).

[*O. speculum* Link var. *regis-ferdinandii* ([Acht. & Kellerer ex] Renz) Soó in Acta Bot. Sci. Hung. 5:439 (1959) *comb. inval.*].

O. speculum Link subsp. *regis-ferdinandii* [Acht. & Kellerer ex] Kuzmanov in Fragm. Geobot. 17:194 (1971).

O. regis-ferdinandii (Renz) Buttler in *Orchidee Sonderh.*: 47 (III. 1983).

Type not designated [Rodhos: Filiramo, 14 iv 1933, *King Ferdinand I of Bulgaria* (SOM 14269, sec. Kuzmanov, *op. cit.*, 1971)].

Distribution: E Aegean Islands, W Anatolian littoral.